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ABSTRACT

The quality of life of nursing home residents may be enhanced by providing them with opportunities to participate in social activities involving different age groups and community-dwelling age peers. To obtain descriptive data, and to investigate the relationships between patterns of social interaction and subject characteristics, time-sampled observations of peer and intergenerational social interactions of the elderly residents of the Benedictine Health Center for the elderly at the College of St. Scholastica, Minnesota, were conducted over a 7-month period. The observation instrument provided proportion-of-time data for 24 locations, 29 activities, 18 types of social interactions, and 9 types of persons. At the beginning and the end of the study residents' functional and psychosocial characteristics were assessed using a multidimensional interview instrument. Observation data showed that, in addition to the very popular individual rooms, areas that afforded opportunity for watching what was going on and for chance social encounters were popular. Interactions between different categories of elderly did not occur as often as within group interactions. Residents' cognitive abilities predicted certain aspects of social activities better than health status and self-care ability. However, both health status and self-care ability accounted for 30 percent of the variation among subjects in their psychological well being. (Author/BL)

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SOCIAL INTERACTIONS IN A COLLEGE-BASED CENTER FOR THE ELDERLY

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ABSTRACT

SOCIAL INTERACTIONS IN A COLLEGE-BASED CENTER FOR THE ELDERLY

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Time-sampled observations of age-peer and intergenerational social interactions were conducted over a 7-month period in a campus-based health care center for the elderly. The purposes were to obtain descriptive data and to investigate the relationships between patterns of social interactions and subject characteristics. The observation instrument provided proportion-of-time data for 24 locations, 29 activities, 18 types of social interactions and 9 types of persons interacted with. Functional and psychosocial characteristics were assessed using a multidimensional interview instrument at both the beginning and the end of the study. Multiple regression analyses used the functional and psychosocial characteristics as predictor variables and the observation data as criterion. "Cognitive ability" predicted certain aspects of social activities better than "health status" and "self-care ability." Causal path analysis was used to determine the effect of social interaction on the psychological well-being ("happiness") of the residents. "Health status" and "self-care ability" accounted for 30% of the variation among residents in their psychological well-being scores.

SOCIAL INTERACTIONS
IN A
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It has been suggested that the quality of life of nursing home residents can be enhanced by providing them with opportunities to participate in social activities involving different age groups and community-dwelling age peers (e g., Kahana 1973; Barney, 1974; Lipman and Slater, 1977; Arch, 1978). The Benedictine Health Center, constructed on our campus in 1980, has put this suggestion into practice by offering programs for skilled and intermediate nursing care residents, day-services for non-resident elderly, and a day-care program for preschool children. In addition, the College's activities are available to residents, and many of the College's students work as interns or volunteers at the center.

The philosophy of the Benedictine Health Center is one of rehabilitation with an emphasis on improving the quality of life of the elderly, helping each resident reach the highest possible physical, social, psychological, and spiritual level, and assisting each person to maintain this level in the most appropriate setting. Consistent with this philosophy, a major goal in planning and operating the Health Center has been to incorporate programs, activities, and services that encourage social integration of the residents with the day-services elderly, the day-care children, and the College community in order to provide an environment resembling a conventional and meaningful way of life.

The purpose of our research was to provide naturalistic data on these social interactions and to investigate the relationships between patterns of social interaction and subject characteristics. This was also of interest to the Center staff as it would provide them useful information regarding the implementation and impact of the Center's philosophy of providing a therapeutic environment.

Question 1: What programs, activities, and environmental factors facilitate the social integration of the various groups at the Health Center?

The first research question was aimed at obtaining information on the manifestation of the Health Center's philosophy with regard to social interactions, especially cross-generational integration and interaction among the various groups of elderly at the Center. In order to determine "where, on what, and with whom" the residents spend their time, quantitative and qualitative information on the subjects' locations, activities and persons interacted with was obtained through time-sampled observations. On the average, three 5-minute observations per subject per week were collected between 8:00 a.m. and 8:00 p.m. on weekdays for 24 weeks during a seven-month period. Twenty intermediate-care, 37 skilled-care, and 13 day-service subjects were randomly selected from those who had agreed to participate.*

Student observers were trained in the use of an observational data recording form and an observers' manual, which included detailed operational definitions of four variables: (a) the LOCATION of the subject, (b) the type of ACTIVITY/PROGRAM engaged in by the subject, (c) the type of PERSON with whom the subject is interacting, and (d) the type of INTERACTION taking place. Inter-observer reliability checks, conducted at several points during the seven-month data collection period, indicated 98, 80, 92, and 85 percent agreement for each variable, respectively. In addition, the research coordinator monitored all completed data forms for inconsistencies and obvious errors. On-going discussion between the coordinator, the observers, and the reliability checkers ensured that different student observers interpreted the operational definitions

*Informed consent was granted by or on behalf of 102 (94%) of the residents and 15 (100%) of the day-service participants.

of the variables in the same way.

From these observational data, tabular comparisons were made of the relative amounts of social interaction so that the Health Center would have a detailed picture of "where, on what, and with whom" the residents spent their time in order to evaluate how successful they had been in achieving their goal of assisting residents in becoming more independent and involved community members.

In Table 1 is the mean percent time spent in five general types of location for each of the three categories of elderly at the Health Center. We actually collected data on 24 different locations, but for present purposes have aggregated them into the five types in the table. These data indicate that residents spent over half of their time in their own rooms, but also spent about one-third of their time in activity areas, especially the dining room.

Table 2 presents the mean percent time spent in ten types of activity or programs. Again, we actually collected data on 29 different activities and programs, but have aggregated them into the ten types in the table. These data indicate that there was very little wandering behavior (3.0% for Intermediate-Care and 3.5% for Skilled-Care). A lot of time was spent in solitary activities (37.4% for Intermediate-Care and 48.1% for Skilled-Care) and observing people (12.9% for both Intermediate-Care and Skilled-Care). True "doing nothing" activities within the solitary and observing people category, which include sleeping/resting, sitting/waiting/watching-inanimate, accounted for 21% of the Intermediate-Care and 36% of the Skilled-Care residents' time. There was a moderate amount of informal socializing (about 14% for both), but not much group activity (3.4% Intermediate-Care and 1.3% Skilled-Care).

The data in Table 3 summarize the relative frequency of interaction the subjects had with nine types of people. Unlike the first two tables, these data are not percentages. Instead, each entry is a mean ratio representing the

degree of interaction with each type of person. For example, for every ten times the Intermediate-Care residents were observed in some location or activity/program, they had an average of about six interactions with another Intermediate-Care resident (since the ratio is .60). Interactions between the different categories of elderly did not occur as often as interactions within each category; that is, Intermediate-Care tends to interact with Intermediate-Care, Skilled-Care with Skilled-Care, and Day-Service with Day-Service. Interactions with staff were frequent, as would be expected. In considering the amount of interaction of the day-service elderly and day-care children with the residents, it would appear that such encounters were rare. However, despite these relatively low ratios, we prefer to emphasize that "the cup is half full rather than half empty," since interviews at the end of the study indicated positive perceptions of their environment due to their knowing that opportunities for such interactions with community-dwelling elderly and children exist. In fact, many prefer and enjoy observing the children but not necessarily interacting with them verbally or physically.

Finally, Table 4 presents data for the types of interactions engaged in by the subjects. These data are also ratios. Most of the types of interaction listed on the left side of the table were divided into "appropriate" and "inappropriate" catagories, but only the "appropriate" data are presented since the quality of interactions was very high. Inappropriate behaviors were very rare. Because of time limitations, we have not planned to discuss these data, but have shown you the table to indicate the qualitative nature of the data collected. Similarly, and also to keep things relatively simple, we presented each of the other variables in Tables 1-3 separately. However, the tables in our full report (Dietrich et al., 1982) include data for the "intersection" of every location with every activity/program with each type of person for each

type of interaction in each of the three trimesters of our seven-month study.

In addition to the observational data, we individually interviewed each subject as part of the post-test assessment of subject characteristics, and we distributed questionnaires to the Health Center staff. The observational data collected in this study are essentially in agreement with the interviews and with the staff questionnaire responses. In summary of research question 1, these sources of information indicate that: (a) in addition to the very popular individual rooms, areas that afford opportunity for watching what's going on and for chance social encounters are popular; (b) the residents are very satisfied with the Health Center's physical environment and programs; (c) there are ample opportunities for social interaction for those who seek them out, and if and when residents partake of these opportunities, the chances of interactions with other types of people are high; (d) the quality of social interactions that occur is high; and (e) there are relatively low levels of interaction among the day-service elderly, the intermediate-care residents, the skilled-care residents, and day-care children. The Health Center has subsequently modified some procedures in order to facilitate such interactions if desired by the residents.

Question 2: What characteristics of the participants facilitate or hinder social integration among them, and how can knowledge of these characteristics be used to optimize a therapeutic match between the psychosocial environment and the individual?

In the first research question, the focus was on describing the pattern of social interactions in order to determine what locations and activities are associated with social integration and interaction. Now, however, in question 2 the focus changes to the subjects' functional and psychosocial characteristics in order to determine the nature of the relationship between subjects' characteristics and their social activities. A major objective of a therapeutic psychosocial environment is to match the demands of the environment and the

available experiences to the individual characteristics, interests, and abilities of the resident (Lawton and Nahemow, 1973). Knowing as much as possible about the new resident can aid in achieving this objective, especially if it can be established that consistent and reliable relationships exist between certain subject characteristics and certain patterns of social interaction. To this end we carried out multiple regression analyses utilizing subject characteristics as the predictor variables and the social interactions data from question 1 as the criterion variables.

Subjects' characteristics were assessed at the beginning and end of the seven-month study by administering the Multilevel Assessment Instrument (MAI) developed by Lawton, Moss, Fulcomer and Kleban (1982) at the Philadelphia Geriatric Center. The subject characteristics assessed by the MAI included cognitive, physical health, personal self-maintenance activities, time use, interaction with friends and family, morale, and perceived environment. We also administered a scale of psychological well-being called the MUNSH (Memorial University of Newfoundland Scale of Happiness) developed by Kozma and Stones (1980). The MUNSH measures a construct called happiness, which is an amalgam of life satisfaction, affect balance, and the PGC morale scale.

Since this study was divided into three trimesters and since the focus of research question 2 is on prediction of social activity based on subject characteristics, we used the pretest (trimester 1) subject characteristics data as the predictor variables and the trimester 2 and 3 observational data on SOCIAL ACTIVITIES as the criterion (dependent) variable. It is important to note that we are using the term SOCIAL ACTIVITIES to include a variety of interpersonal interactions such as visiting/conversing, being helped with personal grooming, demonstrating or showing something to another person, and helping another person. We used a different term, GROUP ACTIVITIES, for structured activities like

crafts, group exercises, sing-alongs, and group discussions. Only the analysis on SOCIAL ACTIVITIES will be reported here since subject characteristics did not significantly predict degree of participation in GROUP ACTIVITIES.

Table 5 lists the pretest variables used as predictors in a stepwise regression analysis and indicates that each variable adds to the ability to predict SOCIAL ACTIVITY. However, only the first variable, COGNITIVE, has a significant partial F test, indicating that the additional variables do not give one much more information than would be obtained by using only the first variable. Thus, knowing a new resident's COGNITIVE level provides about as much information as can be obtained from the MAI for predicting SOCIAL ACTIVITY in subsequent months. This finding makes common sense, since SOCIAL ACTIVITY involves conversing with others, which is more likely to occur among cognitively able individuals. What may be of greater interest, however, in these findings is that knowing about the residents' HEALTH, SELF-MAINTENANCE, and interaction with FAMILY or FRIENDS does not provide significantly more information than simply knowing the COGNITIVE scores. Thus, it may be useful for the staff to investigate beyond the usually known characteristics of the resident -- such as her medical condition, ability to take care of herself or how much she visits with her family or friends -- by periodically doing an assessment of the individual's cognitive abilities.

In summary of the second research question, the multiple regression analysis provided predictive information that should be of value in aiding a long-term care facility in providing activities and opportunities for social interaction that are appropriately matched to the characteristics of each person. It should be pointed out, however, that the goal is not to unthinkingly plug residents into environmental niches dictated by a mathematical formula, but rather to provide a first estimate about the resident in order to facilitate the

staff's learning how best to serve new residents' needs and enrich their stay at the facility.

Question 3: What is the impact of the social interactions on the participants' functional and psychological characteristics?

Since the ultimate goal of the Benedictine Health Center's methods of operation is to improve the quality of life of the elderly by helping each person reach the highest possible physical, social, psychological, and spiritual level, question 3 is aimed at determining the impact of social interactions on the subjects' functional and psychological characteristics. Because the design of the study was non-experimental, path analysis* was utilized to determine the effect of social interactions on the psychological well-being of the residents.

Of the characteristics we assessed, HAPPINESS as measured by the MUNSH is the variable that best represents psychological well-being. Therefore, we chose HAPPINESS as the target variable for our path analysis model. The hypothesis was that in addition to the expected impact of health, self-care, and cognitive factors, subjects would have post-test HAPPINESS scores that would also be attributable, at least in part, to their levels of social activity during the preceding months. The path analysis model in Figure 1 illustrates the hypothesized causal relationships among several variables. The arrow lines between variables indicate direct and indirect effects on post-test HAPPINESS.

The model in Figure 1 hypothesizes that HEALTH status has a direct impact on one's HAPPINESS but that there is also an indirect effect of HEALTH through

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*Path analysis uses multiple regression analyses to test causal hypotheses. However, it should be remembered that actual causes, such as can be determined in controlled experiments, are not demonstrated by path analysis. Rather, path analysis helps the investigator determine whether the results are consistent with the causal hypotheses.

SELF-MAINTENANCE, meaning that in addition to direct concern with one's poor HEALTH, it is also the things one can or cannot do because of health status that contribute to HAPPINESS.

In the middle of the model are two aggregated variables based on observational data: SOCIAL ACTIVITY and GROUP ACTIVITY. These two activity variables are representative of the sort of experience thought to potentially have positive effects on subjects. In this case, it was hypothesized that higher activity levels during trimesters 1 and 2 would lead to higher HAPPINESS scores on the post-test during trimester 3. Based on the multiple regression analysis reported earlier, COGNITION was hypothesized to affect the degree to which one engaged in social activities (which includes conversing with others) and, therefore, have an indirect impact on HAPPINESS through SOCIAL ACTIVITY.

In summary of this third research question, the path analysis confirmed the important impact on both health status and self-care abilities, which together accounted for 30% of the variation among subjects in their psychological well-being (HAPPINESS) scores.* However, the analysis did not support the hypothesized effects of social and group activities on psychological well-being. Several reasons were considered for this failure to support the hypotheses. First, as reported in research question 1, the average levels of GROUP ACTIVITY were very low and only moderate for SOCIAL ACTIVITY. This would suggest that any potential impact did not have a chance to express itself statistically because of low inter-subject variability. Second, because the MUNSH was answered by only the cognitively capable subjects, the subject sample size was small (n = 38), and this may have reduced variability. Finally, the effects may very likely take longer to be manifested than was possible to demonstrate in this short-term project.

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*Squaring the Rv for HAPPINESS shows that about 70% of the variation among individuals is left unaccounted for by the model.

Conclusion

The model of a health center providing day-service along with skilled and intermediate nursing care is likely to become more popular in view of its cost benefits and due to the increasing number of elderly. The descriptive data will, therefore, be of interest and use to service providers in long-term care and day-service settings and to those planning such facilities. Researchers and service providers may also be interested in the observation instrument developed for this study, especially the observers' manual containing training methods and operational definitions. It is also hoped that this study will be a source of hypotheses for further investigation including: (a) comparative studies of other long-term care facilities, (b) cognitive intervention research given the important role played by cognition in the regression analyses, and (c) exploration of additional correlates and causes of psychological well-being given that the path analysis accounted for only part of the variance among individuals.

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TABLE 1: MEAN PERCENT TIME SPENT IN LOCATIONS AGGREGATES.

LOCATION	INTERMEDIATE-CARE RESIDENTS	SKILLED-CARE RESIDENTS	DAY-SERVICE ELDERLY
RESIDENT ROOMS	53.7	58.4	0
TRAVEL AREAS	8.9	10.8	4.3
ACTIVITY AREAS	32.4	27.3	86.1
TREATMENT/THERAPY	1.3	1.2	4.6
OTHER LOCATIONS	4.3	2.2	5.1

TABLE 2: MEAN PERCENT TIME SPENT IN ACTIVITIES AGGREGATES.

ACTIVITY	INTERMEDIATE-CARE RESIDENTS	SKILLED-CARE RESIDENTS	DAY-SERVICE ELDERLY
TRAVELING	3.0	3.5	2.2
EATING	6.7	7.0	4.6
SOLITARY ACTIVITIES	37.4	48.1	20.0
OBSERVING PEOPLE	12.9	12.9	29.2
SOCIALIZING	14.4	14.0	12.0
TREATMENT/THERAPY	0.6	0.8	5.0
RELIGIOUS SERVICES	2.5	1.1	2.3
GROUP ACTIVITIES	3.4	1.3	13.8
OTHER	4.1	3.4	5.0
UNKNOWN/UNSURE	14.2	7.7	5.7

TABLE 3: MEAN RATIO OF NUMBER OF TIMES SPECIFIC PERSONS ARE INTERACTED WITH PER ONE OCCURRENCE OF ANY LOCATION AND ACTIVITY.

PERSON	INTERMEDIATE-CARE RESIDENTS	SKILLED-CARE RESIDENTS	DAY-SERVICE ELDERLY
DAY-SERVICE	.03	.02	.73
INTERMEDIATE-CARE	.60	.11	.24
SKILLED-CARE	.09	.24	.07
CHILD	.01	.01	.02
STAFF	.57	.65	1.21
VISITOR	.07	.07	.12
FAMILY	.07	.20	.01
GROUP	.01	.01	.04
OTHER	.91	.90	.70

TABLE 4: MEAN RATIO OF NUMBER OF TIMES SPECIFIC TYPES OF INTERACTION OCCURRED PER ONE OCCURRENCE OF ANY LOCATION AND ACTIVITY.

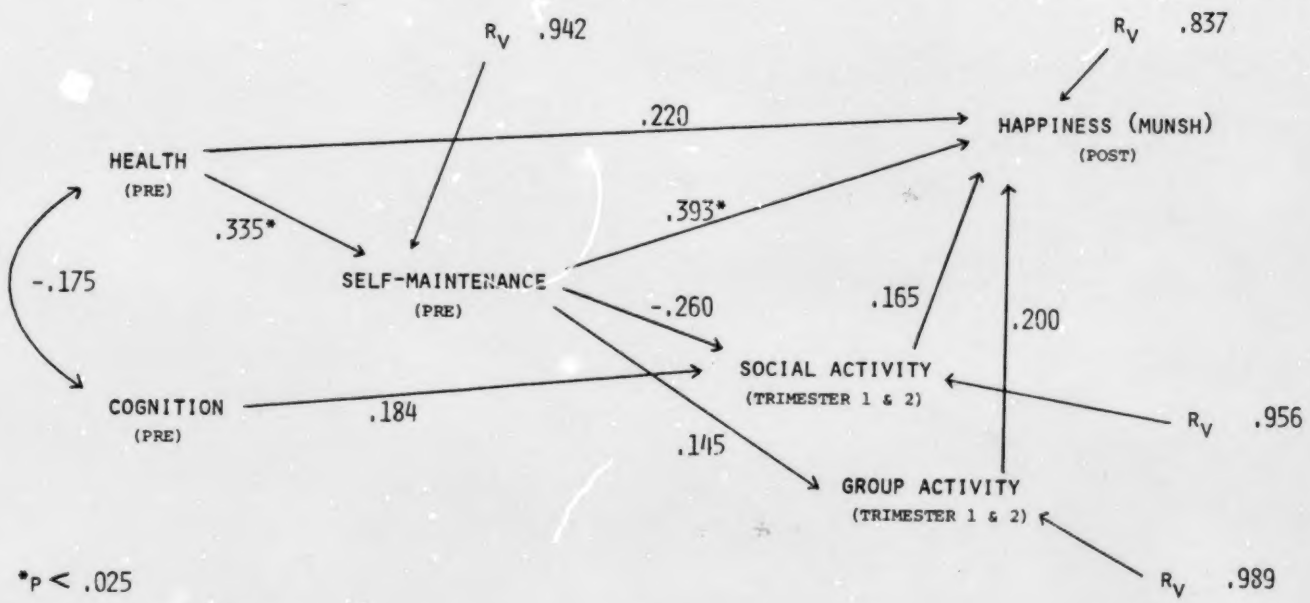
INTERACTION	INTERMEDIATE-CARE RESIDENTS	SKILLED-CARE RESIDENTS	DAY-SERVICE ELDERLY
SUBJECT SPEAKING	.34	.30	.44
OTHER SPEAKING	.34	.31	.49
ATTENTIVE: ACTIVE	.35	.29	.48
ATTENTIVE: PASSIVE	.39	.38	.92
INATTENTIVE	0	0	0
LAUGH/SMILE	.06	.03	.12
CRYING	0	0	0
CONTACT	.03	.05	.04
UNSURE	.01	.01	0
IGNORED/REBUFFED	0	.02	0
WITHDRAWN/ISOLATED	0	0	0
NEUTRAL	.58	.65	.41
UNKNOWN OR UNSURE	.25	.15	.22

TABLE 5: STEPWISE REGRESSION PREDICTING PARTICIPATION IN SOCIAL ACTIVITIES DURING SUBSEQUENT TRIMESTERS 2 & 3 WITH MAI ADMINISTERED IN TRIMESTER 1.

STEP NO.	MAI VARIABLE ENTERED	MULTIPLE R	R^2	PARTIAL F TEST	TOTAL F TEST
1	COGNITIVE	.444	.197	12.508**	12.508**
2	FRIENDS	.471	.222	1.588	7.121**
3	FAMILY	.486	.236	.940	5.055*
4	HEALTH	.490	.240	.263	3.800*
5	TIME USE	.492	.242	.101	3.003*
6	SELF MAINTENANCE	.493	.243	.048	2.460*

N = 53
* SIGNIFICANT AT .05 LEVEL
**SIGNIFICANT AT .01 LEVEL

FIGURE 1: PATH DIAGRAM FOR THE SOCIAL INTERACTION MODEL.



*$P < .025$

R_V = LATENT OR RESIDUAL VARIABLES.